

REMARKS

In response to the Office Action mailed on January 18, 2007, Applicants respectfully request reconsideration. To further expedite the prosecution of this Application towards allowance, Applicants amend claim 35 to include the limitations of previously pending claims 40 and 41 and submit new claims 46-51. Applicants respectfully request that the application be passed to issue.

Thus, claims 35-45 were previously pending in the subject Application. Claims 46-51 are being added by way of this amendment. Claims 40 and 41 are being canceled. No new matter was added to the application when amending or adding these claims.

The submission of any claim amendments should not be interpreted as acquiescing to any of the rejections as the claim amendments are being made to expedite prosecution of the subject application to allowance.

Objection to Figures

Applicants submit a set of formal figures 1-13 to replace the originally submitted informal figures.

Objection to Claim 40

In accordance with the Examiner's suggestion, Applicants have amended the scope of claim 40 to recite a first communication port prior to canceling claim 40 and including such limitations into amended claim 35. Thus, the cited defect is not carried forward into amended claim 35.

Amended Claim 35

Applicants have amended claim 35 to include the limitations of previously pending claims 40 and 41. The Examiner has not formally rejected claim 40 under 35

U.S.C. § 102. However, the Examiner did reject dependent claim 41 based on the teachings of Chandhoke (U.S. Patent Application Publication 2002/0186245).

Applicants are appreciative of the Examiner's review of claim 35 and respectfully request further consideration of same in view of the following discussion pointing out why amended claim 35 (including limitations of previously pending and no canceled claims 40 and 41) is unique and non-obvious over the cited prior art.

Amended claim 35 reads as follows:

35. A data acquisition node comprising:
a first circuit board supporting communications over a network;
a second circuit board coupled to at least one of:
i) an input device, and
ii) an output device;
a connector interface coupling multiple conductors of the first circuit board to the second circuit board; and
the first circuit board including a corresponding first programmable interface coupled to the multiple conductors, the second circuit board including a corresponding second programmable interface coupled to the multiple conductors, configuration settings of the first programmable interface and the second programmable interface enabling conveyance of signals between the first circuit board and second circuit board;
wherein the first circuit board includes a first communication port supporting upstream communications and a second communication port to support downstream communications; and
wherein the upstream communications include communications to a central controller and the downstream

communications include communications to other data acquisition nodes in a data acquisition and control system.

Amended claim 35 includes limitations not recited by the prior art. For example, claim 35 recites a first port that supports upstream communications from the first circuit board to a central controller and a second port that supports downstream communications to other data acquisition nodes.

The Examiner likens the I/O connector 202 in Chandhoke (of the circuit board shown in FIG. 6A) to include the first and second ports as recited by the claimed invention. For example, the Examiner asserts that the I/O connector 202 in Chandhoke connects to logic 204, which the Examiner likens to a central controller. However, there is no indication that the I/O connector 202 connects to other data acquisition nodes in a data acquisition and control system. Accordingly, the office action's assertion that Chandhoke discloses every limitation of the claimed invention is improper.

More specifically, the I/O connector in 202 in Chandhoke does appear to connect to other circuit boards of the same data acquisition node as FIGS. 6A, 6B, and 6C appear to disclose multiple circuit boards that stack on top of each other to form a single data acquisition node. And although Chandhoke indicates that the combination of hardware (in FIG. 6A, 6B, and 6C) can be disposed in a computer or connected to a computer via a network connection, there is no teaching or suggestion that such hardware (e.g., the circuit boards in FIGS. 6A, 6B, and 6C) is configured to communicate with multiple remote data acquisition nodes (e.g., other nodes that collect data) as in the claimed invention. That is, the Examiner has not cited any portion of Chandhoke in which the circuit board in FIG. 6A includes a port to communicate with multiple other data acquisition nodes.

Accordingly, Applicants respectfully submit that the invention as recited in now amended claim 35 is neither anticipated nor obvious because it includes a unique and

useful configuration not taught or suggested by the cited references. Thus, in view of the foregoing discussion, Applicants submit that amended claim 35 is patentably distinct and advantageous over the cited prior art, and the obviousness rejection should be withdrawn. By virtue of dependency, claims 36-39 and 42-45 should be in condition for allowance as well.

Applicants respectfully submit that the dependent claims also include limitations distinguishing the claimed invention over the cited prior art.

For example, claim 44 recites "wherein the first circuit board and corresponding first programmable interface, based on communications over the network from a remotely located controller, drives a signal to the second circuit board via at least one of the multiple conductors to synchronize the controller with functionality of the second circuit board." The Examiner asserts that data acquisition card 114 (in FIG. 5) is equivalent to the first circuit board in the claimed invention. The Examiner asserts that image acquisition device 134 (in FIG. 5) is equivalent to the second circuit board in the claimed invention. The Examiner also cites paragraph 254 of Chandhoke, which reads as follows:

[0254] In step 866 a hardware configuration based on the graphical program may be downloaded onto the programmable hardware element 206 in the image acquisition device (e.g., smart camera 190) to configure the programmable hardware element 206. For example, in the embodiment where the image acquisition device is coupled to the computer system 82 over a network, deploying the graphical program may comprise the computer system 82 deploying the graphical program over the network to the image acquisition device. The hardware configuration corresponds to a hardware implementation of the graphical program. In one embodiment, downloading the hardware configuration onto the programmable hardware element 206 may comprise the following steps: generating a hardware description based on the graphical program, where the hardware description describes a hardware implementation of the graphical program;

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converting the hardware description into a netlist; compiling the netlist format into a hardware program file; and downloading the hardware program file to the programmable hardware element to configure the programmable hardware element. These steps are discussed below.

Applicants respectfully submit that there is no indication whatsoever that the data acquisition card 114 receives communications from a remote controller (e.g., a computer) for purposes of synchronizing the image acquisition device 134 with the remote controller. Accordingly, Applicant respectfully submit that Chandhoke does not anticipate claim 44.

In a similar vein, the invention in claim 45 recites "wherein the second circuit board and corresponding second programmable interface, based on events detected by the input device, drives a signal to the first circuit board via at least one of the multiple conductors to synchronize functionality of the second circuit board with a remotely located controller over the network." Applicants respectfully submits that there is no indication whatsoever that the image acquisition device 134 of FIG. 5 in Chandhoke receives input and communicates through the data acquisition card 114 and over a corresponding network to synchronize functionality of the image acquisition device 114 with the remote controller. Accordingly, Applicants respectfully request that the rejection be withdrawn.

New claims 46-51

Support for claims 46-51 can be found in FIGS. 1-3, corresponding text, as well as elsewhere throughout the application. New claims 46-51 should be allowable by virtue of dependency.

CONCLUSION

In view of the foregoing remarks, Applicants submit that the pending claims as well as newly added claims are in condition for allowance. A Notice to this affect is

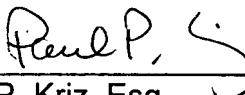
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respectfully requested. If the Examiner believes, after reviewing this Response, that the pending claims are not in condition for allowance, the Examiner is respectfully requested to call the Applicant(s) Representative at the number below.

If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned Attorney at (508) 616-9660, in Westborough, Massachusetts.

Respectfully submitted,



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